

Application No. 10/579,318  
Paper Dated: March 10, 2008  
In Reply to USPTO Correspondence of October 9, 2007  
Attorney Docket No. 2950-061389

**AMENDMENTS TO THE DRAWINGS**

The attached sheet of drawings includes changes to Figs. 3A and 3B. This sheet, which includes Figs. 3A, 3B, and 4, replaces the original sheet including Figs. 3A, 3B, and 4.

Attachment: Replacement Sheet  
Annotated Sheet Showing Changes

## REMARKS

### Introduction

This Amendment is responsive to the October 9, 2007 Office Action. In the Office Action, claims 1-3 stand rejected. In response, claim 1 has been amended to add clarifying language in accordance with the originally-filed specification and drawings. Applicants submit one Replacement Drawings Sheet (Figs. 3A, 3B, and 4) to label Figs. 3A and 3B as prior art. Further, new claims 4-6 have been added. Support for the new claims can be found in the specification at page 1, lines 15-23 and page 10, lines 19-22. No new matter has been introduced by the foregoing amendments. Claims 1-6 are now pending.

### Objection to the Drawings

The Office Action has objected to Figs. 3A and 3B for failing to label them as prior art. Figs. 3A and 3B have been amended to designate them as prior art. Reconsideration and withdrawal of this objection are respectfully requested.

### Rejections Under 35 U.S.C. §102

Claims 1-3 stand rejected under 35 U.S.C. § 102(b) for anticipation by the Hutchins patent.

The present invention relates to a rockbolt made of steel pipes and, more particularly, to a steel pipe rockbolt including a rockbolt main body and a sleeve for introduction of a pressurized fluid, which is attached to the rockbolt main body at a side for supply of the pressurized fluid. The rockbolt main body is configured to hydraulically expand upon the introduction of the pressurized fluid. The sleeve has a projecting part and a bearing-plate-holding part. The projecting part has an outer diameter larger than an aperture of a bearing plate and an opening for injection of the pressurized fluid. The bearing-plate-holding part has an outer diameter smaller than the aperture of the bearing plate. In the state that the rockbolt main body is placed in a rockbolt-setting hole of the bedrock or ground, the bearing plate locates on an edge of the rockbolt-setting hole, and the bearing-plate-holding

part extends through the bearing plate into the rockbolt-setting hole.

Thus, the rockbolt, as defined in claim 1, is an expansive-type rockbolt having a pressurized-fluid-introducing sleeve partially inserted in a rockbolt-setting hole of bedrock or ground in order to decrease the height of the sleeve projecting from a sprayed concrete layer. Due to the decrease in the projection height, a lining concrete layer can be formed without suffering from thickness deviation and cracking, so that the bedrock or ground can be firmly reinforced with high reliability.

The Hutchins patent is directed to a cable bolt (10) having a plurality of wires (11). The end of the cable bolt is terminated with a sleeve (17) having a threaded external surface for receiving a lock nut (18) to tension the bolt against a bearing plate (19). The bearing plate has a "trumpet" portion (20) extending from the bearing plate (19) into a bore hole (21). The lock nut (18) includes a bore (24) that connects to a tube (26) for the introduction of a grout mix.

In use, the cable bolt of the Hutchins patent is installed in the roof of a mine by drilling a stepped bore hole (21) in the mine roof to the required length. Next, a two part resin adhesive in separate plastic packs (39, 40, and 41) is placed in the hole and is pushed upwardly to the top of the hole by insertion of the cable bolt (10). When the resin has reached the inner end (42) of the hole, further insertion of the cable bolt fractures the packaging and the two parts of the resin are allowed to mix and react with each other. The resin is quick curing and the cable bolt is then secured in the bore hole (21) at the upper end (42) and the lock nut (18) is tightened to force the bearing plate (19) against the mine roof. Further, if the cable bolt is to be grouted over its entire length, grouting is pumped via the grout tube (26) until it fills the bore hole and all the spaces surrounding the strands (11) up to the resin seal (29).

A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference. *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987); MPEP §2131. The Hutchins patent fails to disclose a steel pipe rockbolt including a rockbolt main body that is configured to hydraulically expand upon the introduction of the

pressurized fluid as defined in amended claim 1. The cable bolt disclosed in the Hutchins patent achieves reinforcement of the walls by tensioning wire threads and using resin or grout filled in a space between the threads and excavation wall. Therefore, the Hutchins patent fails to anticipate claim 1.

With respect to claims 2 and 3, the Office Action does not appear to address the specific features of these claims. The Hutchins patent, however, fails to disclose a projecting part having a groove formed on its outer surface along a circumferential direction and where the rockbolt main body is formed from a steel pipe coated with a Zn, Zn-Al or Zn-Al-Mg plating layer. Therefore, the Hutchins patent fails to anticipate claims 2-3.

With respect to new claims 4-6, the Hutchins patent fails to disclose a rockbolt main body having a continuous outer surface defining a hollow cavity or where the rockbolt main body is a deformed pipe having an expansive groove extending along an axial direction of the deformed pipe as defined in claims 4 and 5, respectively. As discussed hereinabove, the cable bolt disclosed in the Hutchins patent has a main body of wire threads and uses resin or grout filled in a space between the threads and excavation wall, rather than an expansion-type main body, to secure the bolt. The "trumpet" portion (20) in Hutchins is part of the bearing plate and is not part of the main body of the bolt. Nonetheless, the "trumpet" portion of Hutchins does extend over an entire length of the rockbolt main body as defined in claim 6. Therefore, the Hutchins patent fails to anticipate claims 4-6.

Further, claims 2-6 depend from and add further limitations to independent claim 1. Thus, claims 2-6 are deemed to be in condition for allowance for all of the reasons set forth hereinabove.

In view of the foregoing amendment and comments, Applicants respectfully request reconsideration of the rejections of claims 1-3 and allowance of the same. Applicants also request the allowance of new claims 4-6.

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Should the Examiner have any questions regarding this information or wish to discuss this matter in further detail to advance prosecution, the Examiner is invited to contact Applicants' undersigned representative by telephone at the number provided below.

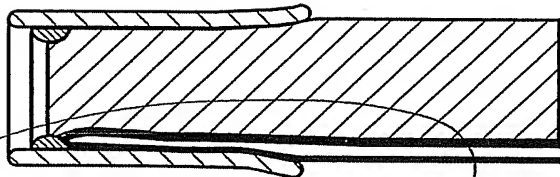
Respectfully submitted,

THE WEBB LAW FIRM

By 

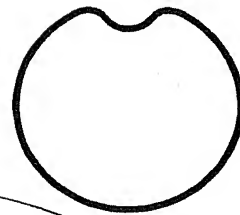
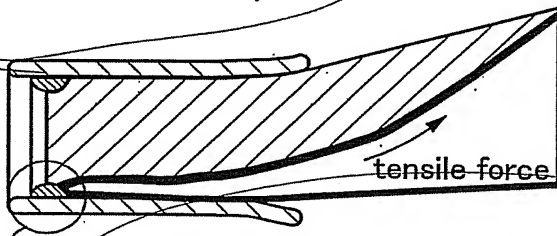
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FIG.3A



(PRIOR ART)

FIG.3B



(PRIOR ART)

FIG.4

